

U.S. Patent Application No. 10/516,558
Amendment dated July 25, 2008
Reply to Office Action dated April 28, 2008

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AMENDMENT TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Withdrawn) A protein or polypeptide which is present in nucleus of human or animal cell and which has a transcription factor function and/or a function that can induce expression of retinoblastoma gene (RB1 gene) or a gene product thereof.
2. (Withdrawn) The human protein according to claim 1, which is a polypeptide or protein selected from a group consisting of: (1) a polypeptide or protein represented by an amino acid sequence set forth in SEQ ID No: 1 in the sequence listing; (2) a polypeptide containing an amino acid sequence comprising at least five amino acids of the amino acid sequence of the polypeptide or protein; (3) a polypeptide or protein having homology of at least approximately 70% at the amino acid sequence level with the polypeptide or protein; and (4) a protein or polypeptide having a mutation or induced mutation such as a deletion, substitution or addition of one to several amino acids relative to the amino acid sequence of the polypeptide or protein according to any one of the preceding (1) to (3).
3. (Withdrawn) The animal protein according to claim 1 that is a protein derived from mouse, and which is a polypeptide or protein selected from the group consisting of: (1) a polypeptide or protein represented by an amino acid sequence set forth in SEQ ID No: 2 in the sequence listing; (2) a polypeptide containing an amino acid sequence comprising at least five amino acids of the amino acid sequence of the polypeptide or protein; (3) a polypeptide or protein having homology of at least approximately 70% at the amino acid sequence level with

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the polypeptide or protein; and (4) a protein or polypeptide having a mutation or induced mutation such as a deletion, substitution or addition of one to several amino acids relative to the amino acid sequence of the polypeptide or protein according to any one of the preceding (1) to (3).

4. (Currently amended) A recombinant vector comprising a purified nucleic acid coding for a protein or polypeptide which is present in nucleus of human or animal cell and which has a transcription factor function and/or a function that can induce expression of retinoblastoma gene (RB1 gene) or a gene product thereof wherein the nucleic acid comprises ~~is set forth in~~ SEQ ID No: 3 or is a nucleic acid strand that is completely complementary to the nucleic acid ~~set forth in~~ comprising SEQ ID No: 3.

5. (Previously presented) A recombinant vector comprising a nucleic acid hybridizing under stringent conditions with a purified nucleic acid set forth in SEQ ID No: 3 or a nucleic acid strand that is completely complementary to the nucleic acid set forth in SEQ ID No: 3; wherein the stringent conditions comprise a condition under which a positive hybridization signal is still observed even after heating at 42 °C in a solution of 6 × SSC, 0.5% SDS and 50% formamide, and washing at 68 °C in a solution of 0.1 × SSC and 0.5% SDS.

6-7. (Canceled)

8. (Previously presented) A transformant that was transformed with the recombinant vector according to claim 4.

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9. (Currently amended) A method for producing a protein or polypeptide which is present in the nucleus of a human or animal cell and which has a transcription factor function and/or a function that can induce expression of retinoblastoma gene (RB1 gene) or a gene product thereof or a complementary strand thereof, wherein the nucleic acid comprises ~~is set forth in~~ SEQ ID NO: 3, comprising a step of culturing the transformant according to claim 8 with the recombinant vector containing nucleic acid coding for the polypeptide or protein.

10. (Currently amended) Nucleic acid primers set forth in SEQ ID Nos: 5 to 37 ~~432~~ in the sequence listing, which hybridize under stringent conditions with the purified nucleic acid set forth in SEQ ID No: 3 or a nucleic acid strand that is completely complementary to the nucleic acid set forth in SEQ ID No: 3.

11. (Withdrawn) An antibody that immunologically recognizes the polypeptide or protein according to claim 1.

12. (Withdrawn) A method of screening for compounds that inhibit or enhance a function that can induce transcription factor activity and/or expression of RB1 gene of the polypeptide or protein according to claim 1, wherein the method utilizes the polypeptide, the protein, or an antibody that immunologically recognizes the polypeptide or protein.

13. (Withdrawn) A method of screening for compounds that interact with the nucleic acid according to claim 4 to inhibit or enhance expression of the nucleic acid, wherein the method

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utilizes the nucleic acid, a recombinant vector containing the nucleic acid, a transformant that was transformed with the recombinant vector, or nucleic acid primers set forth in SEQ ID NOS: 5 to 132 in the sequence listing which hybridize under stringent conditions with the nucleic acid.

14. (Withdrawn) A compound that was screened by the screening method according to claim 12.

15. (Withdrawn) A compound that inhibits or enhances transcription factor activity and/or a function that can induce expression of RB1 gene of the polypeptide or protein according to claim 1.

16. (Withdrawn) A compound that interacts with the nucleic acid according to claim 4 to inhibit or enhance expression of the nucleic acid.

17. (Canceled)

18. (Withdrawn) A method of testing and diagnosing a disease related with expression or activity of the polypeptide or protein according to claim 1, wherein the method comprises a step of conducting analysis employing (a) a nucleic acid encoding the polypeptide or protein and/or (b) the polypeptide or protein, as a marker in a sample.

19. (Withdrawn) The method of testing and diagnosing according to claim 18, which is a method of testing cancer cells or a method for diagnosing a cancer.

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20. (Withdrawn) The method according to claim 18 which detects expression, increase, decrease, lack or the like of all or a part of the polypeptide or protein, wherein the method utilizes an antibody that immunologically recognizes the polypeptide.
21. (Withdrawn) The method according to claim 18 which detects expression, mutation, lack or insertion or the like of all or a part of a gene encoding the polypeptide or protein through a step of amplifying a gene encoding the polypeptide or protein utilizing at least one of nucleic acid primers set forth in SEQ ID NOS: 5 to 132 in the sequence listing, which hybridize under stringent conditions with the nucleic acid.
22. (Withdrawn) The method according to claim 18, wherein the method combines assay of expression, increase, decrease, mutation, lack or insertion or the like of all or a part of tumor-suppressor gene retinoblastoma gene (RB1 gene) or the gene product thereof (RB1 protein).
23. (Withdrawn) The method according to claim 18, wherein the method combines assay of expression, increase, decrease, mutation, lack or insertion or the like of all or a part of multidrug resistance gene (MDR1 gene) or the gene product thereof (MDR1 protein: P-glycoprotein).
24. (Withdrawn) The method according to claim 18, wherein the method combines assay of expression, increase, or decrease or the like of all or a part of the cell proliferation marker, Ki-67 protein.

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25. (Withdrawn) A method that tests drug sensitivity of a cancer cell using the method according to claim 23.

26. (Withdrawn) A kit and a reagent for assay or diagnosis, for use in the method according to claim 18.